



## Regional-scale climate-variability synchrony of cholera epidemics in West Africa

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### Abstract:

**BACKGROUND:** The relationship between cholera and climate was explored in Africa, the continent with the most reported cases, by analyzing monthly 20-year cholera time series for five coastal adjoining West African countries: Cote d'Ivoire, Ghana, Togo, Benin and Nigeria. **METHODS:** We used wavelet analyses and derived methods because these are useful mathematical tools to provide information on the evolution of the periodic component over time and allow quantification of non-stationary associations between time series. **RESULTS:** The temporal variability of cholera incidence exhibits an interannual component, and a significant synchrony in cholera epidemics is highlighted at the end of the 1980's. This observed synchrony across countries, even if transient through time, is also coherent with both the local variability of rainfall and the global climate variability quantified by the Indian Oscillation Index. **CONCLUSION:** Results of this study suggest that large and regional scale climate variability influence both the temporal dynamics and the spatial synchrony of cholera epidemics in human populations in the Gulf of Guinea, as has been described for two other tropical regions of the world, western South America and Bangladesh.

**Source:** <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1839095>

### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Precipitation

#### Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal

#### Geographic Location:

resource focuses on specific location

Non-United States

**Non-United States:** Africa

**African Region/Country:** African Country

# Climate Change and Human Health Literature Portal

**Other African Country:** Cote d'Ivoire;Ghana;Togo;Benin;Nigeria

**Health Impact:** 

specification of health effect or disease related to climate change exposure

Infectious Disease

**Infectious Disease:** Foodborne/Waterborne Disease

**Foodborne/Waterborne Disease:** Cholera

**Intervention:** 

strategy to prepare for or reduce the impact of climate change on health

A focus of content

**Mitigation/Adaptation:** 

mitigation or adaptation strategy is a focus of resource

Adaptation

**Resource Type:** 

format or standard characteristic of resource

Research Article

**Timescale:** 

time period studied

Time Scale Unspecified

**Vulnerability/Impact Assessment:** 

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content